

iitOnline+

*putting ^ in the classroom*

**Enhancing the online educational  
experience via integrated, time  
correlated comments**

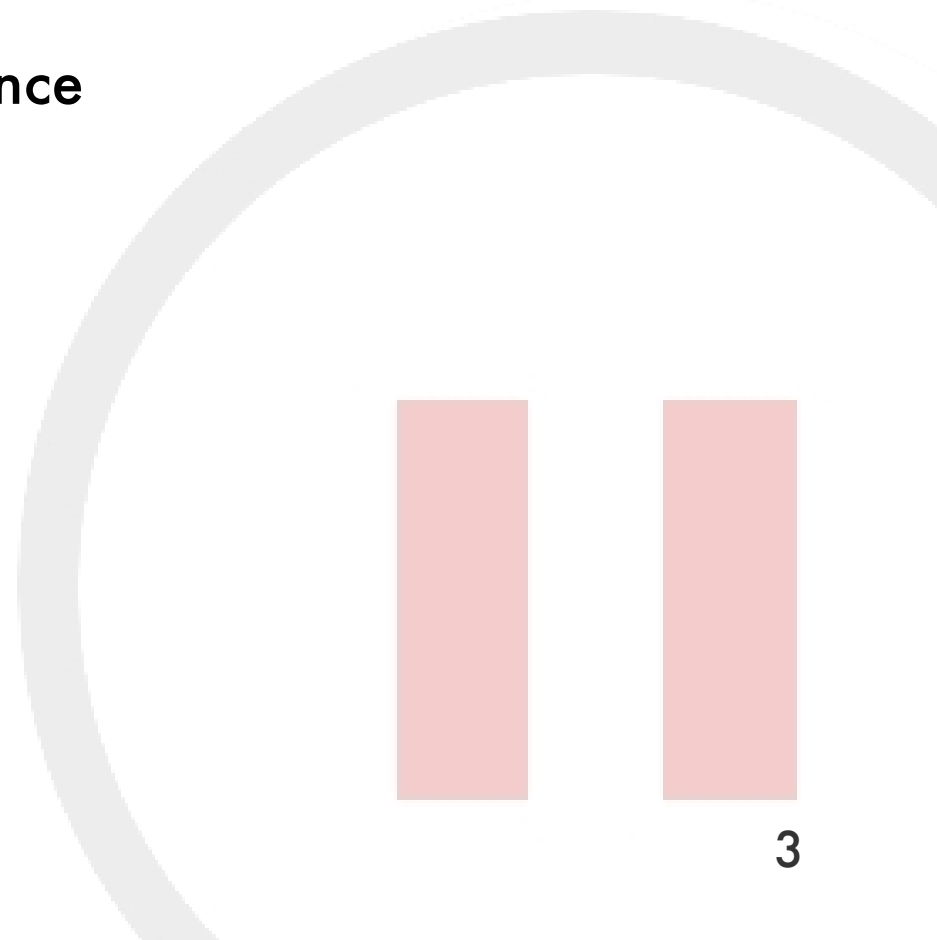
**Presenters:**

Ori Rawlings  
Chris Osswald  
Antoinette Smith  
Jason Petsod

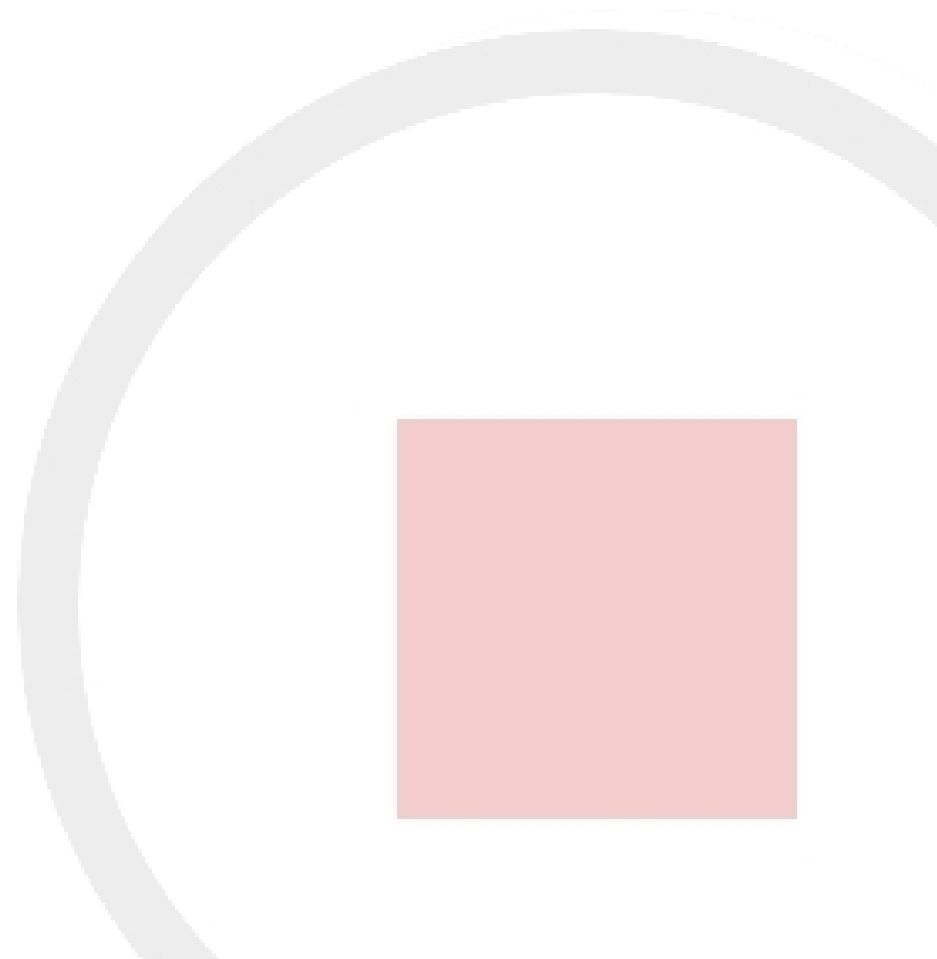
# Outline

---

- Introduction
- Team Development and Performance
- Project Work
- Problem Solving Technique
- Achievement
- Conclusion
- Question and Answer

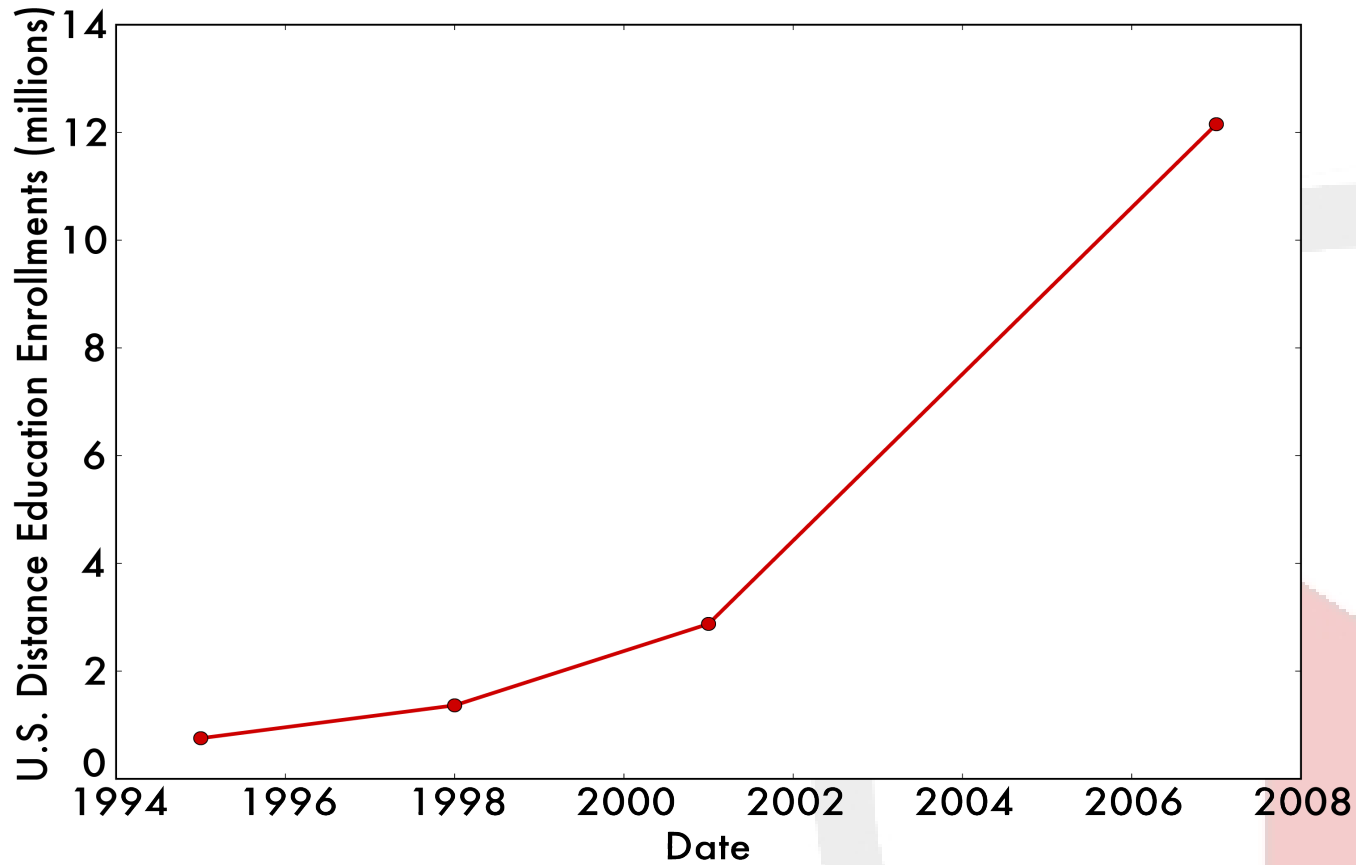


# Introduction



# Motivation

---



# Motivation

---

- Failure to mimic benefits of real world classroom
  - Limited student interaction
- Opportunity to improve online education

# Proposed Solution

- Develop a rich video commenting system
- Integrate commenting system with streaming online lectures

# Hypothesis

---

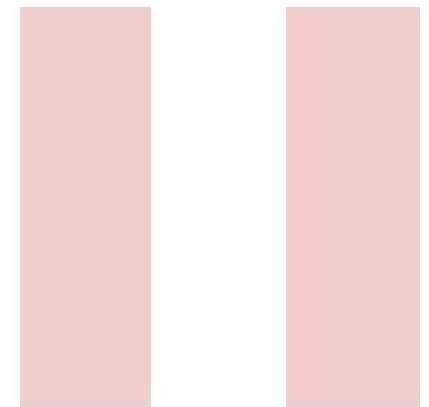
- Integrated rich commenting will improve online interaction
- Student interaction improves student performance
- Thus, our system will improve online education



# Semester Objectives

- Design and implement online education system
- Measure and verify system usability
- Develop a deployment and integration plan

# Team Development and Performance



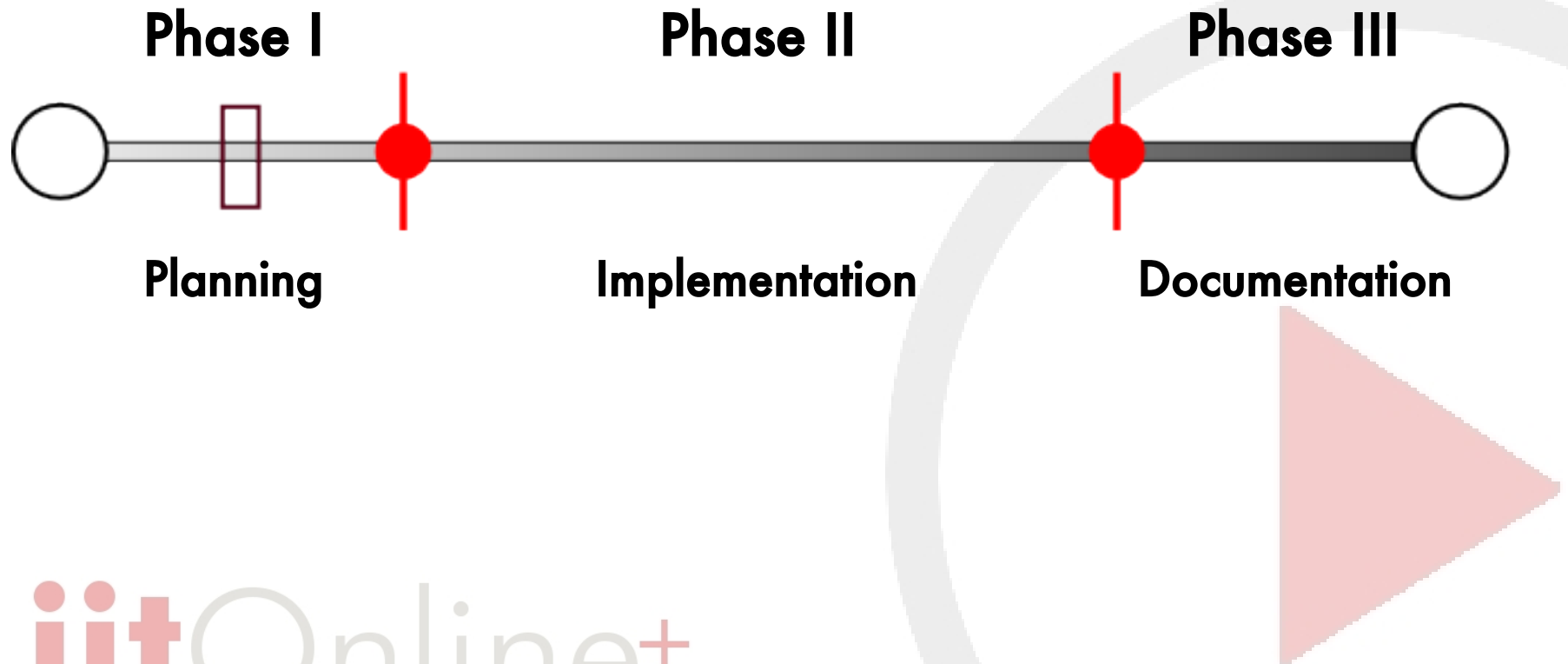
# Establishing Values

- Identifying best practices
- Reinforcing best practices
- Reflecting on our performance

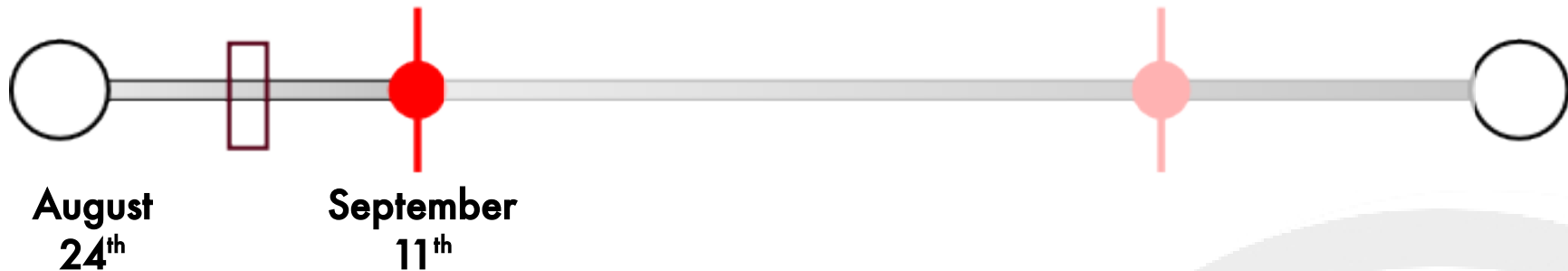
# Team Organization

- Novel three-phase approach
  - Phase I – Planning
  - Phase II – Implementation
  - Phase III – Documentation

# Team Organization

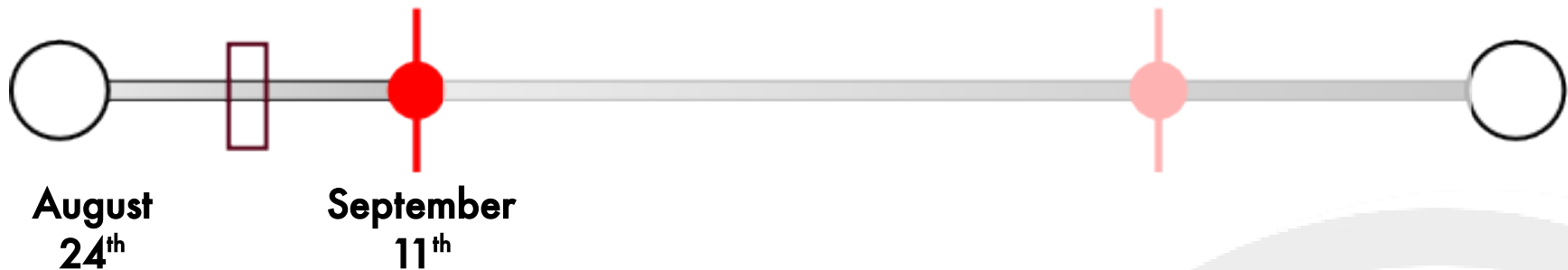


# Phase I – Planning



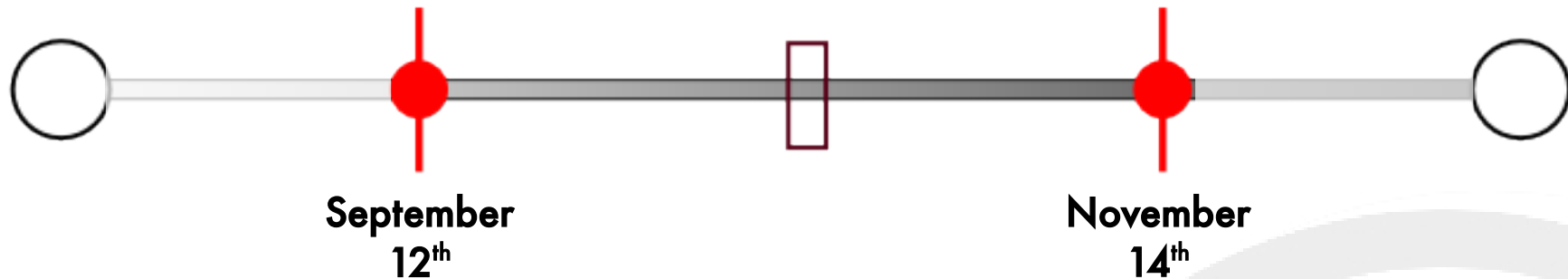
- Define team organization
- Project Plan
- Team values and expectations
- Future milestones
- Requirements gathering

# Phase I – Planning



- Sub-teams:
  - User Liaison Planning Team
  - School Liaison Planning Team
  - Development Planning Team

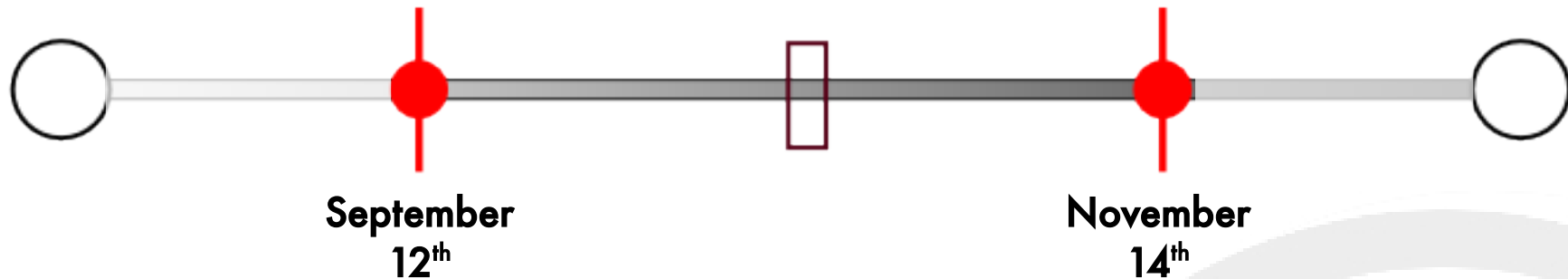
# Phase II – Implementation



- Further requirements gathering
- Survey students, faculty, and administration
- System development
- Interface design
- Usability testing

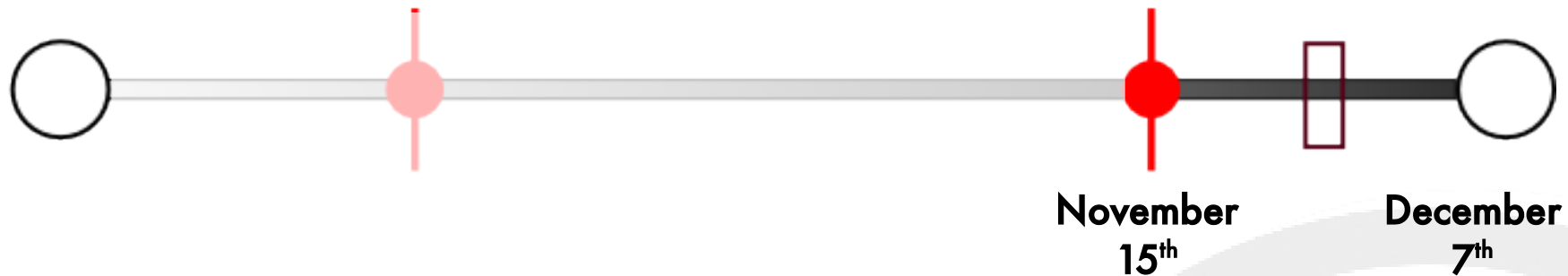


# Phase II – Implementation



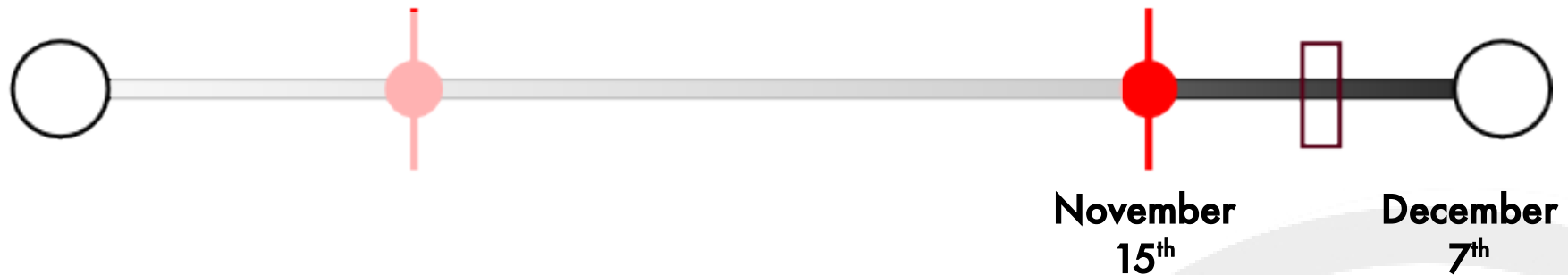
- Sub-teams:
  - User Liaison Team
  - School Liaison Team
  - Development Team

# Phase III – Documentation



- Complete work integration
- Prepare system documentation
- Produce IPRO deliverables

# Phase III – Documentation



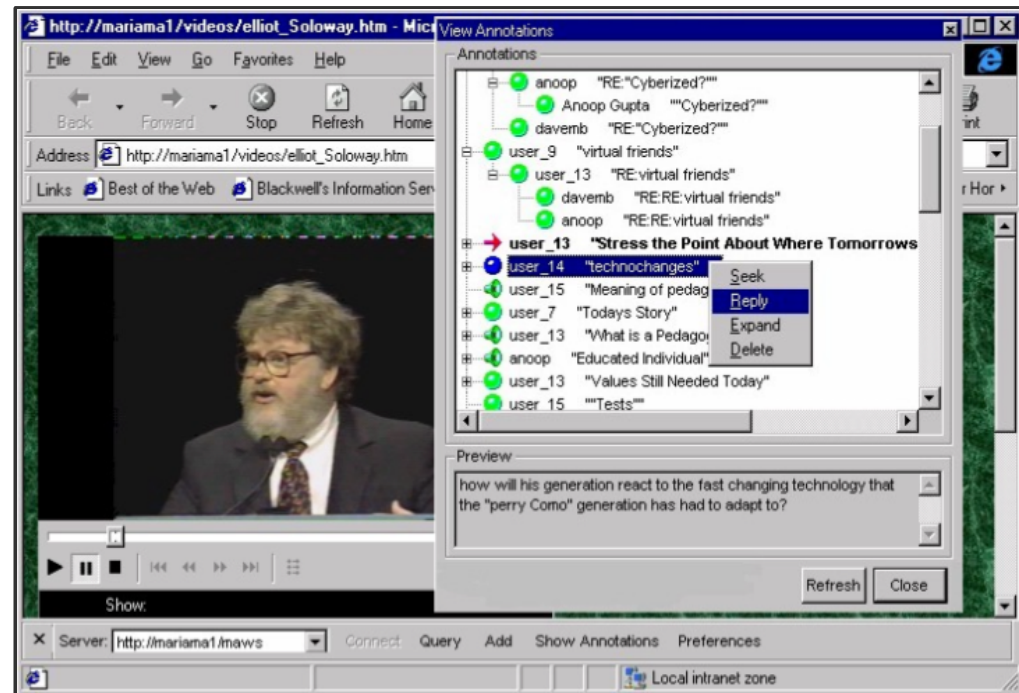
- Sub-teams:
  - Development/Integration Team
  - Deliverables Team
    - Brochure/Poster
    - Presentation
    - Final Report

# Project Work



# Related Work

- Microsoft Research Annotation System (MRAS)



# Project History

- toca, LLC
  - ethnoKEN™
- eduKEN

ethnoKEN™ Visual Market Intelligence Alpha Release  
provided by toca™

Wai Gen Yee  
[Logout](#)  
[Change Password](#)

Task Queue [Search]

Pilot Study : cb\_sl\_cam [Show Field Notes](#)

Transcript [Search]

[00:00:13.06]See, I somehow got Safari. Crate and Barrel outlet store. I love fish. I love things that have fish ...yeah not everything but...

Q:Do you like to eat fish?[00:00:34.15]I like to eat fish.

Q:You really like fish then. So have you had an experience with Second Life before?[00:00:44.01]I haven't. I've heard of it but I haven't.

Q:So the website is secondlife.com. And get in there and just anything that comes into your mind as far as things that you see,

Interpretation

Set Current Timestamp Segment Seek Video

0 [Timeline] 00:00:00.04

Show Users

conversing c

wants it simple simple simple, this frustration is not coherent with a game experience

# Studies Performed

---

- Preliminary Questionnaire
- Usability Testing

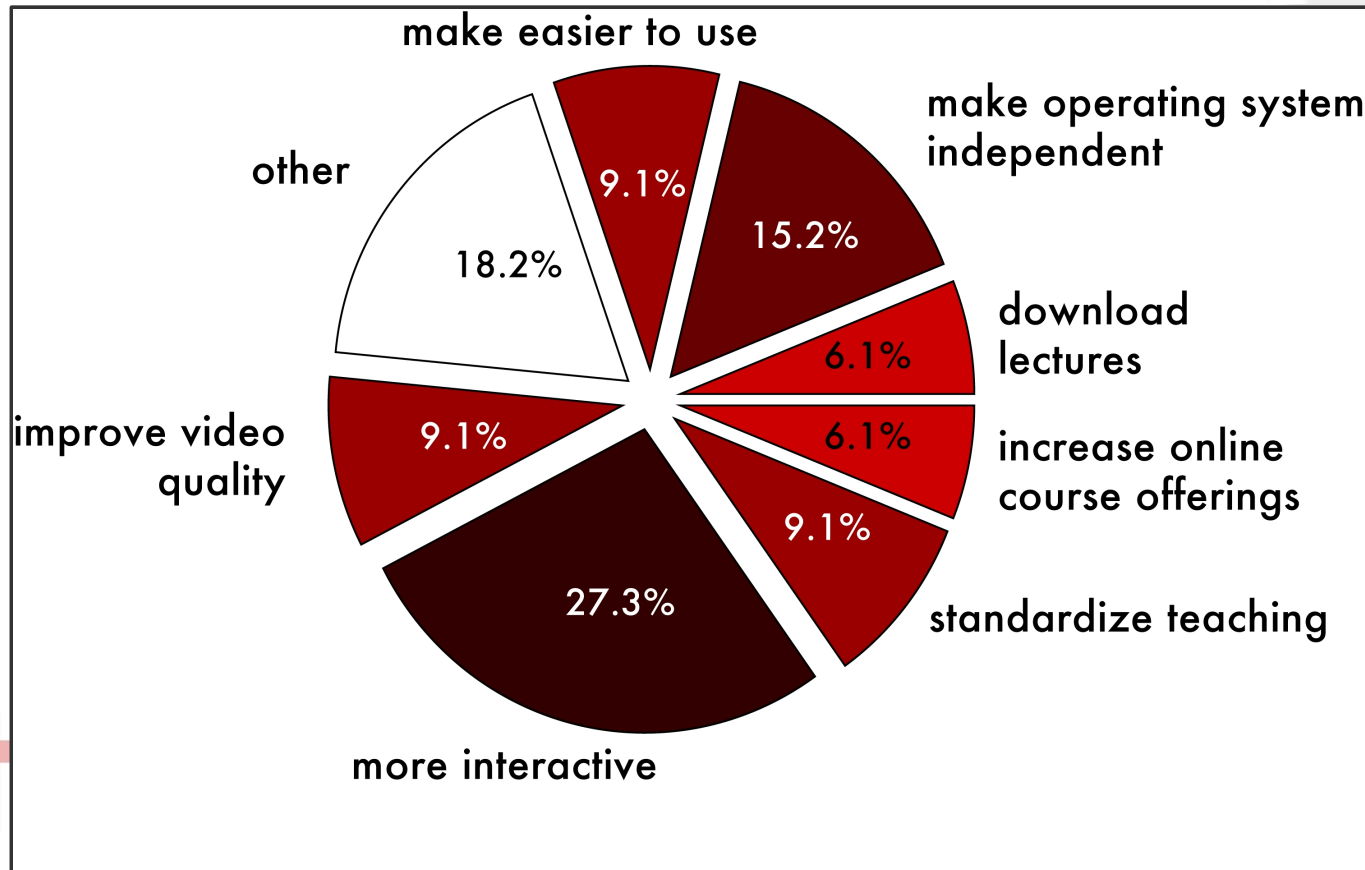
# Preliminary Questionnaire

- Objective
  - Determine desired functionality from students, faculty, and administration
- Process
  - Researching survey design
  - Eliciting subjects
  - Administering online



# Preliminary Questionnaire

- Results



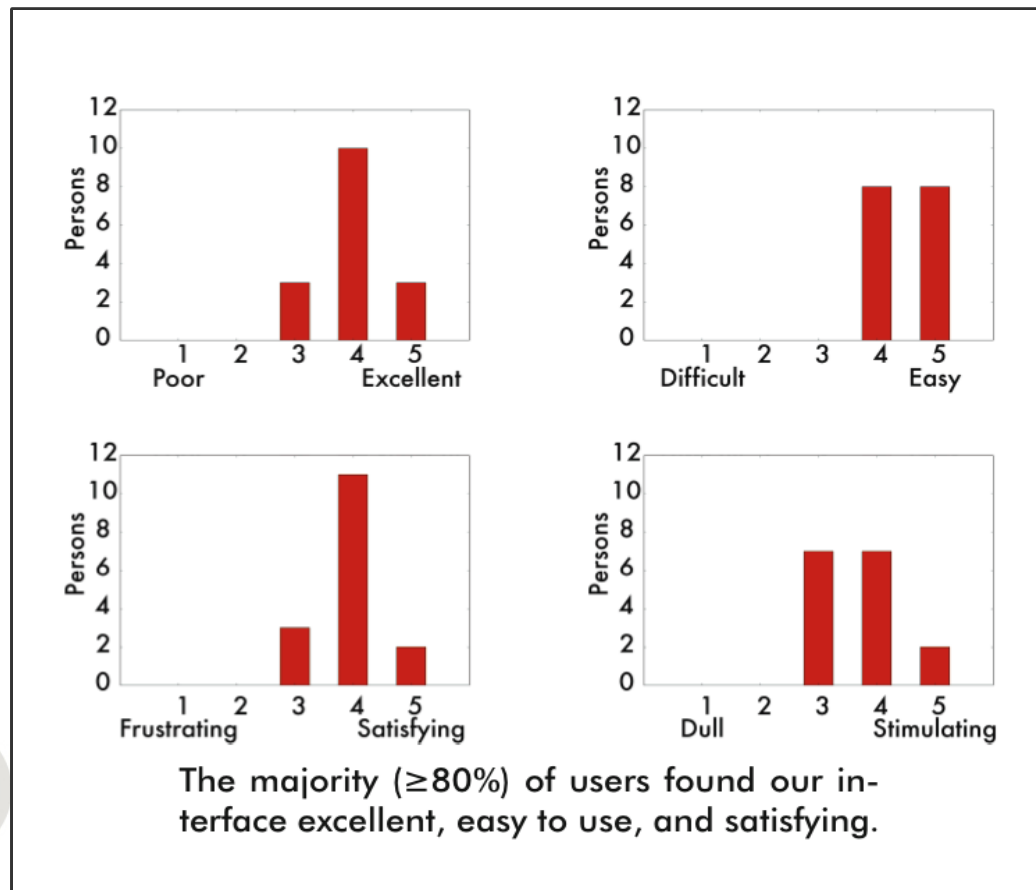
# Usability Testing

---

- Objective
  - Measure usability of developed prototype
- Process
  - Researched usability metrics and methods
  - Developed surveys and task sequence
  - Elicited volunteers
  - Incorporated feedback

# Usability Testing

- Results



# Major Impacts and Risks

- Impacts
  - Improved online education
  - Improved video indexing and search
- Risks
  - Compromising personal data
  - Compromising intellectual property

# Major Challenges

---

- Potentially disruptive innovation
- Measuring success
- Equitable distribution of work

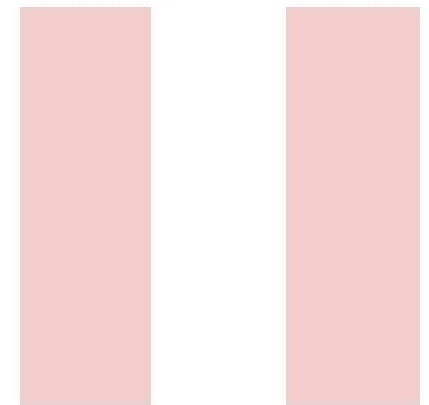
# Ethical Issues

---

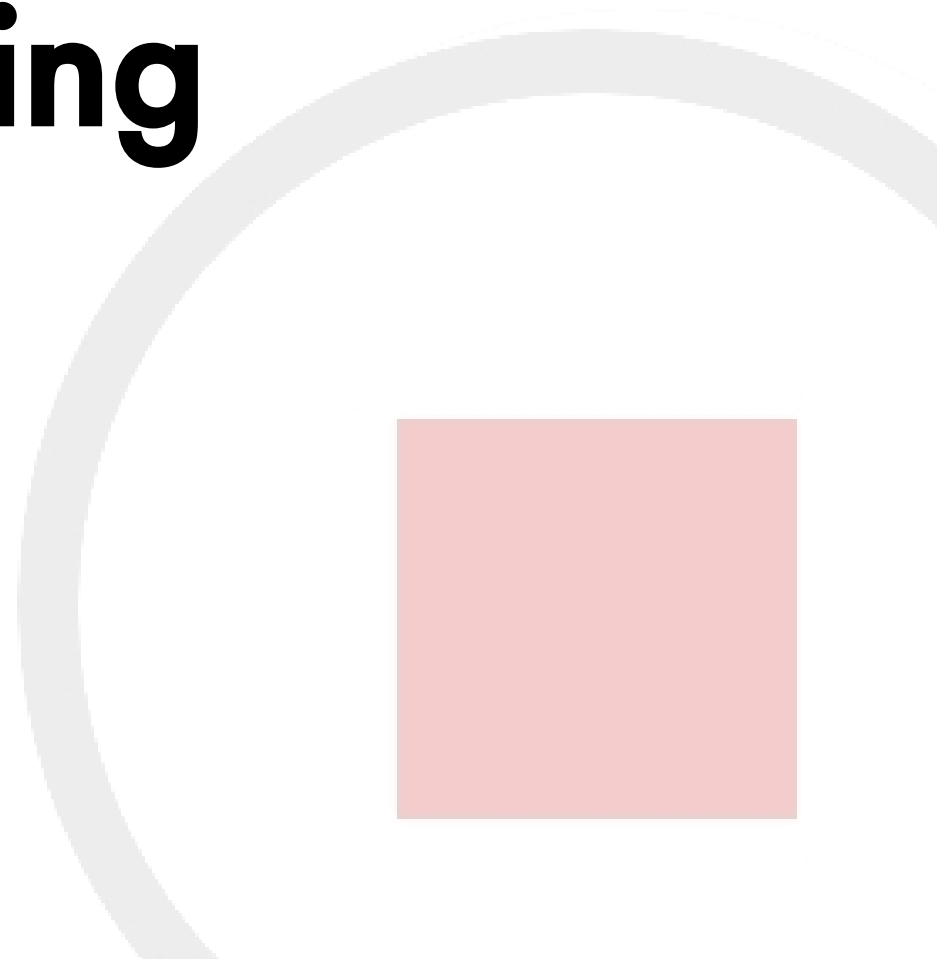
- Institutional Review Board (IRB)
- Non-Disclosure Agreement with toca, LLC
- Intellectual property of professors

# Project Continuation

- Spring 2010
  - Deployed in classrooms
  - Beta testing and usability improvements
  - Privacy policy
- Later semesters
  - Measure educational impact of system



# Problem Solving Technique





# Research

---

- Technical
  - MRAS
  - Designing UIs
  - Model-View-Controller
  - User Authentication
  - Ruby on Rails
  - JavaScript/AJAX
- Soft Skills
  - Team Communication
  - Designing Surveys
  - Principles of Document Design
  - Good Writing Habits
  - Presenting Results

# Methods

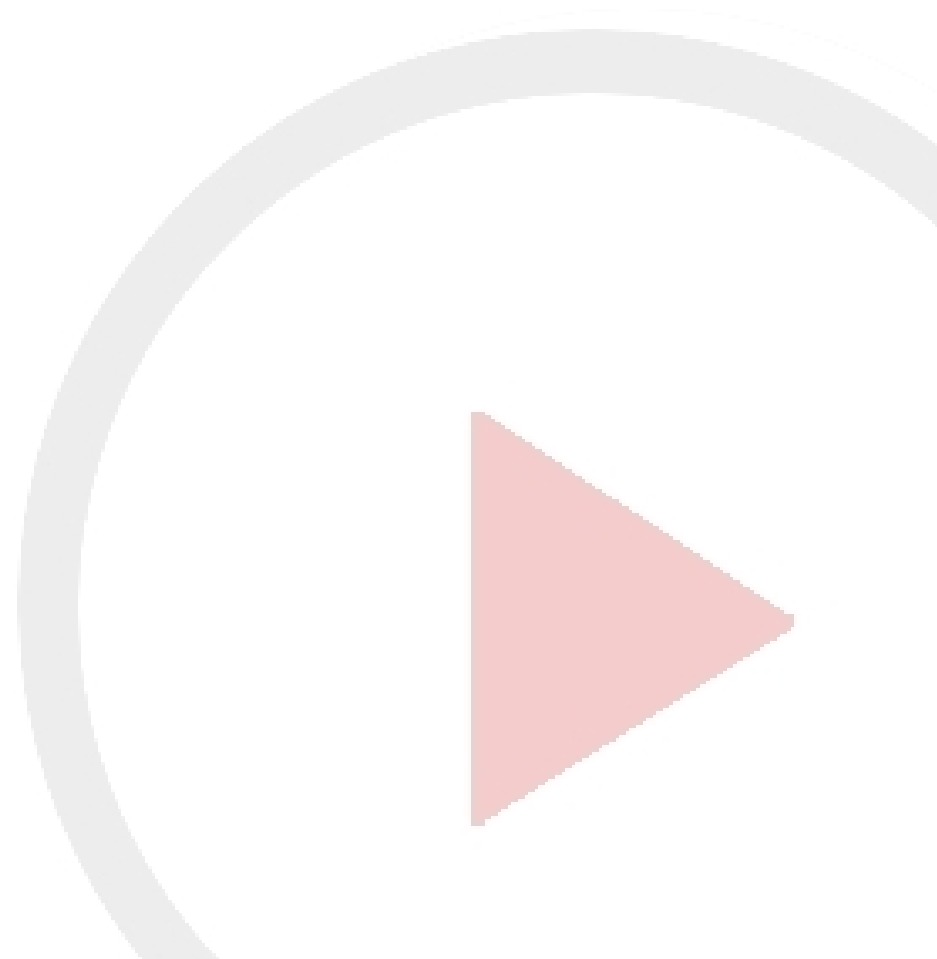
---

- Iterative prototyping
- Design patterns
- Version control
- Unit testing
- Brainstorming
- Survey research
- Usability testing

# Innovative Approaches

- Phase-based team organization
- Wiki-based communication

# Achievement



# System

iitOnline+ [Home](#) Hello, inky. [Logout](#)

Lecture 2 2009-08-26 19:00:00 · [CCC100-1](#)

Cosine Solution

$$x = A \cos(\omega t + \varphi)$$

- A: amplitude (m)
- $\omega$ : angular frequency (rad/s)
- $\varphi$ : phase angle (rad)

With period:  $T = \frac{2\pi}{\omega}$

[Jump Video](#)

06:23 / 13:40

[@6:27](#) what's a "rad"?

[Add Comment](#)

[@2:18](#) what if the spring has mass? [blinky](#) · 6 days ago

[reply](#)

This is a test comment.

[Add Comment](#) [Cancel](#)

When does the professor describe an ideal case? [inky](#) · 6 days ago

[reply](#)

[@6:08](#) why does he use dots to indicate derivatives? i thought we use primes [inky](#) · 6 days ago

[reply](#)

I missed when the professor describes amplitude. What is amplitude? [pinkv](#) · 6 days ago

[reply](#)

[@5:20](#) neat demo, helped me understand why it's a sine wave [inky](#) · 6 days ago

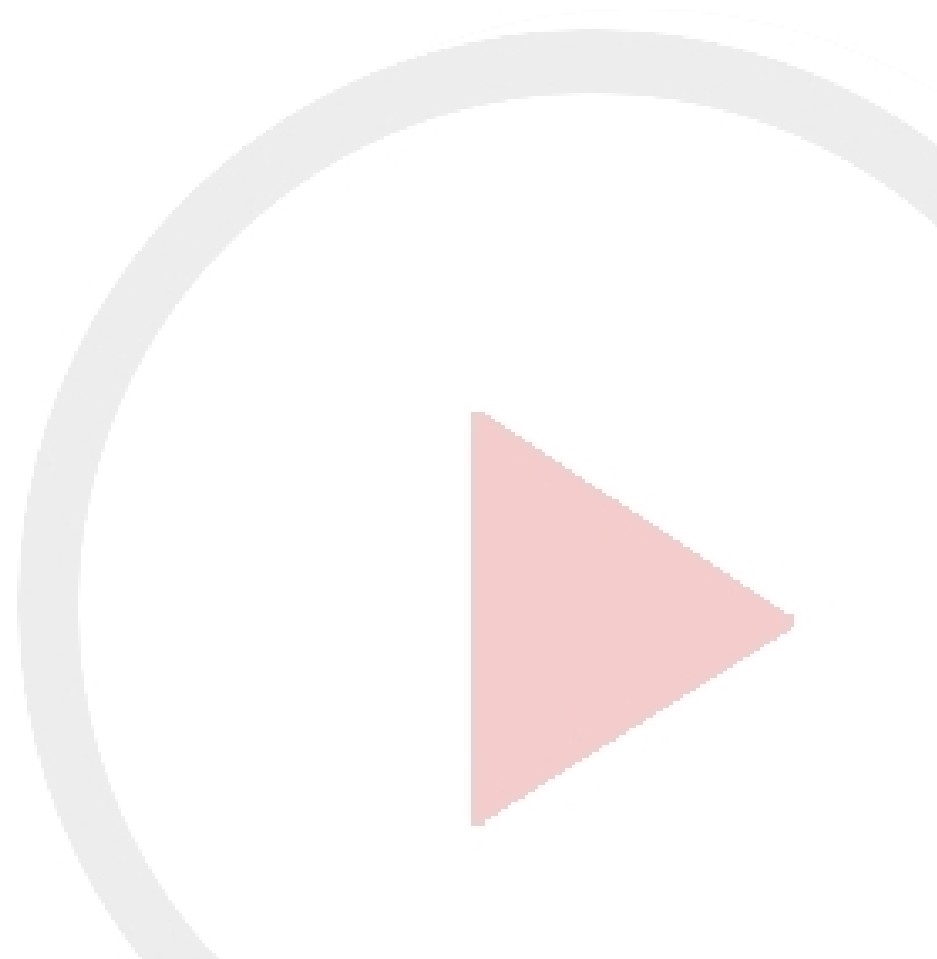


# Significance

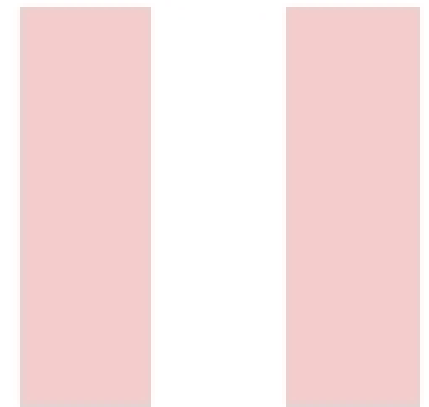
---

- 12.2 million people enrolled in distance education worldwide
- Opened up market to toca, LLC
- 58 students at IIT in Spring 2010

# Conclusion



- 
- Online education lacks student interactivity
  - **iit**Online<sup>+</sup> integrates existing technologies to enhance interactivity
  - Potential to improve quality of online education





# Question and Answer

